GDAS elevation correction on Lambert ...

This thread is locked   jonc 33 posts since

Sep 20, 2007 Dear LIS group,

Based on the results I've seen (included in this post), I suspect that I need to implement a GDAS elevation correction for a Lambert projection in the LIS code.

I already verified with Sujay that the GDAS elevation correction between the GTOPO30 and LIS elevations is only available on the latlon and Gaussian projections in LIS. Since I'm running on a Lambert projection over nearly the whole CONUS (at 4km horizontal grid spacing), I figure the elevation correction is quite important around the Rockies. In my preliminary results using GDAS forcing, I'm seeing LIS 0-10 cm soil temperatures and moistures that are considerably warmer and drier than the NAM initializations over the Colorado Rockies (not the baseball team).

So, what I'd like is some guidance from LIS coding experts as to how I can code up a GDAS elevation correction for the Lambert projection. Since LIS already has Lambert grid routines, I figure it's probably a fairly straight-forward implementation by calling existing subroutines, but then again I could be wrong.

Please share your thoughts on this subject.

Jon Case **Attachments:**

-
    sltk1-lisic_2007032800_f000.gif (38.6 K)
-
    soim1-lisic_2007032800_f000.gif (66.1 K)

Tags: lis, elevation, correction, lambert

sujay *118 posts since*
Sep 20, 2007 1. **Re: GDAS elevation correction on Lambert projection** Jun 17, 2008 11:36 AM

Hi Jon,

I have added the support for GDAS elevation correction in a lambert projection mode. Can you please get the updates and try a testrun?

Also, we are in the process of removing the separate specification of reading routines for different projections. In future this will be handled by LIS with a generic call.

-Sujay

jonc *33 posts since*
Sep 20, 2007 2. **Re: GDAS elevation correction on Lambert projection** Jul 7, 2008 11:28 AM

in response to: sujay

Hello Sujay,

I ran the svn update and re-compiled LIS this morning. Unfortunately, I still cannot get the GDAS elevation correction to work:

Jon

GDAS elevation correction on Lambert ...

***************Error***************************

elevation reading routine for domain 1 and forcing 4 is not defined

program will segfault.....

***************Error***************************

***************Error***************************

elevation reading routine for domain 1 and forcing 4 is not defined

program will segfault.....

***************Error***************************

***************Error***************************

elevation reading routine for domain 1 and forcing 4 is not defined

program will segfault.....

***************Error***************************

***************Error***************************

elevation reading routine for domain 1 and forcing 4 is not defined

program will segfault.....

***************Error***************************

forrtl: severe (174): SIGSEGV, segmentation fault occurred

Image PC Routine Line Source

LIS_GDASTEST-1(mp 0000000000D5C4EE Unknown Unknown Unknown

libc.so.6 0000002A96657500 Unknown Unknown Unknown

LIS_GDASTEST-1(mp 0000000000D5C4CA Unknown Unknown Unknown

libc.so.6 0000002A96657500 Unknown Unknown Unknown

forrtl: severe (174): SIGSEGV, segmentation fault occurred

Image PC Routine Line Source

LIS_GDASTEST-2(mp 0000000000D5C4EE Unknown Unknown Unknown

libc.so.6 0000002A96657500 Unknown Unknown Unknown

LIS_GDASTEST-2(mp 0000000000D5C4CA Unknown Unknown Unknown

libc.so.6 0000002A96657500 Unknown Unknown Unknown

forrtl: severe (174): SIGSEGV, segmentation fault occurred

Image PC Routine Line Source

LIS_GDASTEST-3(mp 0000000000D5C4EE Unknown Unknown Unknown

libc.so.6 0000002A96657500 Unknown Unknown Unknown

LIS_GDASTEST-3(mp 0000000000D5C4CA Unknown Unknown Unknown

libc.so.6 0000002A96657500 Unknown Unknown Unknown

forrtl: severe (174): SIGSEGV, segmentation fault occurred

Image PC Routine Line Source

LIS_GDASTEST-0(mp 0000000000D5C4EE Unknown Unknown Unknown

libc.so.6 0000002A96657500 Unknown Unknown Unknown

GDAS elevation correction on Lambert ...

LIS_GDASTEST-0(mp 0000000000D5C4CA Unknown Unknown Unknown

libc.so.6 0000002A96657500 Unknown Unknown Unknown

- mpimon --- Aborting run after process-0 terminated abnormally Childprocess 29734 exited with exitcode 174 ---

jonc *33 posts since*
Sep 20, 2007 3. **Re: GDAS elevation correction on Lambert projection** Jul 18, 2008 11:42 AM

in response to: sujay

Hi Sujay,

I was wondering whether you had a chance to look into my reply from a week or so ago regarding the GDAS elevation correction problem?

I ran the svn update, re-compiled and re-ran LIS, but still ran into the same type of errors regarding the GDAS elevation correction option.

Please advise when you get a moment.

thanks,

Jon

sujay *118 posts since*
Sep 20, 2007 4. **Re: GDAS elevation correction on Lambert projection** Jul 18, 2008 1:20 PM

in response to: jonc Jon,

My apologies for not responding sooner. I think the commit didn't really make it into the repository the first time around. Can you please try updating the source tree again?

Thanks,

-Sujay

jonc *33 posts since*
Sep 20, 2007 5. **Re: GDAS elevation correction on Lambert projection** Jul 18, 2008 1:53 PM

in response to: sujay

Thanks Sujay.

It looks like it's running now with the GDAS elevation correction on the NSSL domain.

Jon

jonc *33 posts since*
Sep 20, 2007 6. **Re: GDAS elevation correction on Lambert projection** Jul 21, 2008 5:19 PM

in response to: sujay

Sujay,

The GDAS elevation correction looks good. I have attached 3 images (GDAS original, GDAS+elevation correction, and the difference field). What I noted is that the elevation correction has the greatest impact on soil moisture in the vicinity of snow cover. Otherwise, the soil moistures are virtually the same.

Jon **Attachments:**

- LIS_soim1_GDAS_2007032800.jpg (54.0 K)
- LIS_soim1_GDAS+ELEV_2007032800.jpg (53.3 K)
- LIS_soim1diff_ELEV-GDAS_2007032800.jpg (49.2 K)